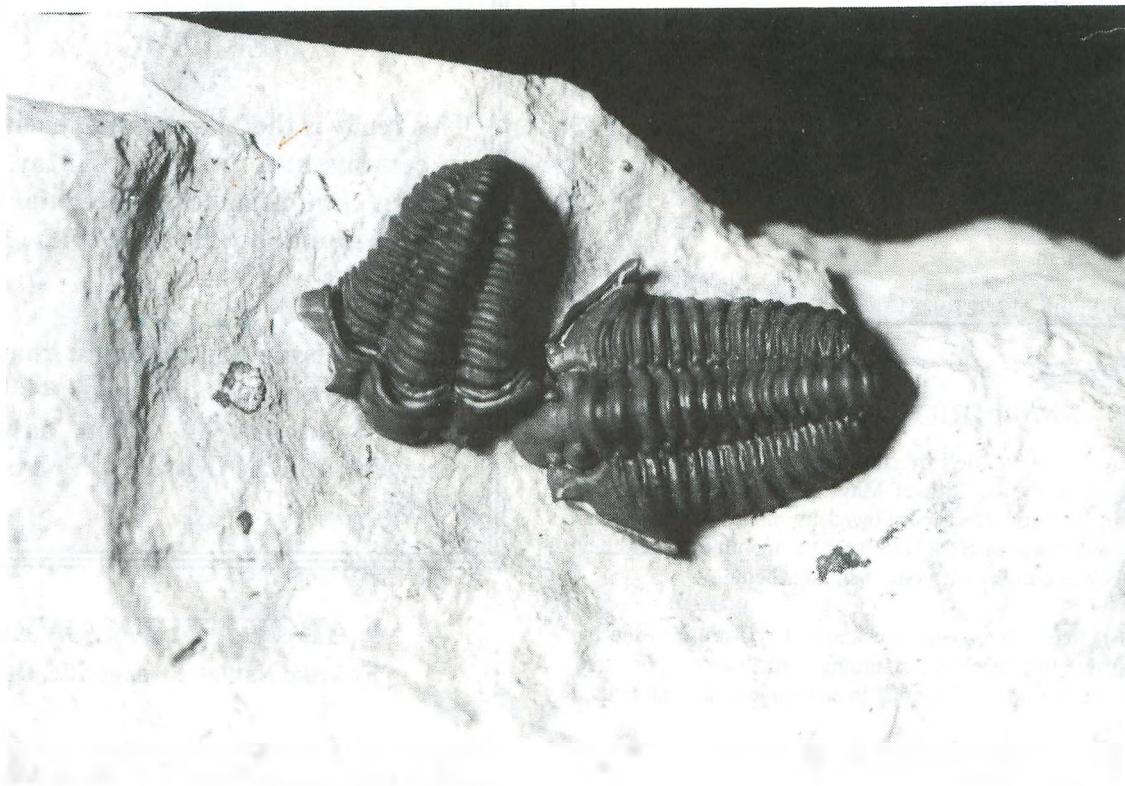


M.A.P.S. *Digest*

Official Publication of
Mid-America Paleontology Society

Volume 21, Number 3
March 1998



MARK YOUR CALENDARS

Jun 13 MAZON CREEK FOSSIL COLLECTING FIELD TRIP PIT 11 IN BRAIDWOOD, IL

Lizzadro Museum of Lapidary Art, 220 Cottage Hill—Wilder Park, Elmhurst, IL 60126. Ph. 630-833-1616 (for info and registration).

Sat: 8 a.m. -3 p.m.

Oct 3-4 "BVFS FLORIDA FOSSIL FAIR

Sponsored by the Bone Valley Fossil Society, Inc.
Lake Mirror Center, 800 E. Main St., Lakeland, FL

Sat: 9 a.m. - 5 p.m.

Sun: 9 a.m. - 4 p.m.

Contact: Ed Metrin
162 Broadmoor Avenue
Lake Mary, FL 32746-3914
407-321-7462
Miocene@earthlink.net

Oct 23-25 FOSSILMANIA XVI, SPONSORED BY AUSTIN AND DALLAS PALEO SOCIETIES

Somervell County Expo Center, Hwy 67 in Glen Rose, TX

Fri: 9 a.m. - 6 p.m.

Sat: 9 a.m. - 6 p.m. (Auction and Raffle Drawing at night)

Sun: 9 a.m. - 2 p.m.

Contact: Ken Smith 217-327-9281

Nov 18-20 SECOND CONFERENCE ON PARTNERSHIP OPPORTUNITIES FOR FEDERALLY-ASSOCIATED COLLECTIONS

Contact: Sally Shelton, Director, Collections Care
San Diego Natural History Museum
P.O. Box 1390
San Diego, CA 92112
619-232-3821, x226; fx 619-232-0248
email: sshelton@sdnhm.org

Dec 4-6 ROUND ROCK, TEXAS, 8TH ANNUAL "FOSSIL FEST"

Sponsored by the Central Texas Paleo Society
Old Settlers Park Exhibit Hall, Hwy 79, 3.3 miles east of IH35

For more information, call (512) 864-0334

NEXT DIGEST

This really is the March issue, even though it is coming out the end of May. Due to various circumstances, the regular issues are about a month behind schedule. Hopefully, this will be rectified by fall.

The next issue of the *Digest* that you will receive is the May-June issue, which will be out around July 1. You have already received the EXPO issue, which is the April issue.

98/04 DUES ARE DUE

Are your dues due? You can tell by checking your mailing label. It reflects dues received by the 26th of May. The top line gives the expiration date in the form of year followed by month—98/04 means 1998/Apr. Dues cover the issue of the Digest for the month in which they expire. (The Digest is currently 1 month behind schedule.)

We do not sent notices but will let you know if you are overdue by highlighting your mailing label and stamping your Digest. We carry overdues for two months before dropping them from our mailing list.

Please include your due date and name exactly as it appears on your mailing label—or include a label.

Dues are \$20 per U.S./Canadian household per year. Overseas members may choose the \$20 fee to receive the Digest by surface mail or a \$30 fee to receive it by air mail. (Please send a check drawn on a United States bank in US funds; US currency; a money order; or a check drawn on an International bank in your currency.) Library/Institution fee is \$25.

Make checks payable to MAPS and mail to:
Sharon Sonnleitner, Treas.
4800 Sunset Dr. SW
Cedar Rapids, IA 52404

ABOUT THE COVER

by Mike Nathal, Strongsville, Ohio.

This pair of *Calymene breviceps* was found by Craig Tipton in the spring of 1996 in St. Paul, Indiana, on a field trip with what is now known as the North Coast Fossil Club of Cleveland, Ohio. Craig and his son had spent the first six hours at the site with hardly any luck when they decided to tear apart a large (3' x 4' x 1.5' thick) boulder of shale. After about 45 minutes of splitting layers from the boulder, they hit a layer with this double and two other single trilobites. This was voted the Club's "Fossil of the Year" at their annual party and competition. The fossil was prepared by MAPS member Marc Behrendt.

EXPO XX—CORALS

MAPS's April EXPO marked the twentieth year of the show. Once again all tables were sold well in advance, and there were many different specimens available. And, of course, there's always the meeting of old and new friends.

James E. Sorauf, Professor of Geology at Binghamton University, Binghamton, N.Y., gave Friday night's keynote address on corals. It was a pleasure to have Jim in our midst for the show.

Saturday night's business meeting was followed by a live auction which, combined with the silent auctions held during the day and donations, raised \$2783.30. A delightful new addition to the corps of auctioneers was Harold (Arizona) Rice, who, along with regulars Jim Konecny, Ken Smith, and Marv Houg, kept the bidding spirited. Three of the top items were an Indiana crinoid (\$80), a pinecone (\$80), and Waldron Shale brachiopods in a frame (\$100).

Thanks to the many members who helped at the front desk, with stuffing the envelopes, running the silent and live auctions, and helping out whenever a hand was needed.

We now look forward to EXPO XXI—Microfossils, April 16-18. Jere Lipps, Immediate Past President of the Paleontology Society, has already agreed to be the keynote speaker. Jere is from the University of California.

MAPS NAMES 1ST RICHARDSON AWARDEE

Joseph G. Emielity, Chatsworth, California, was named the first recipient of the Eugene Richardson Award April 18th at EXPO. Brian Witzky accepted the award for him since his health did not allow him to travel. Brian said he first met Joe when he was 10 years old and, with a group of friends, took a box of trilobites he had collected to Joe's museum to learn more about them. Joe welcomed him with open arms and gave him a book. That was the beginning of a long nurturing friendship that resulted in Brian's pursuit of a career in paleontology.

Following is a letter of thanks Joe sent Alberta Cray, who forwarded the letters submitted in support of his nomination:

I received the beautiful Eugene Richardson Award presented to me by the wonderful members, friends, and paleontologists of the Mid America Paleontology Society. Thank you very, very much.

PROCEEDINGS OF THE SOCIETY

A MAPS meeting was held Saturday night, April 18, at EXPO. The following suggestions were made for themes for the show in 2000: Teeth, Insects, Problematic Fossils, Sponges. Teeth was selected by vote for 2000 and Insects for 2001.

It was announced by a member that 23 rooms have been reserved at Days Inn for April 14-18, 1999, for anyone who wants to set up there to deal.

Charles Oldham addressed Alan Goldstein's article, "The Future of Amateur Paleontology: Comments From a Fossil Park Naturalist," carried in the January issue of the *Digest*. He felt the information in the article concerning the Speed quarry was inaccurate and directed at him. Charlie said he had received many calls about his role in quarry's closing. He stated that the quarry was closed to collectors because of a change in management and in interpretation of OSHA rules, not because of overcollecting and the use of "heavy equipment." When his group collected in the quarry, they always had the permission of the management both to collect and to use the saws and tools, such as mauls, that they used. When new management took over, they interpreted OSHA rules to extend to the perimeter, including the overburden, rather than just the pit, and that is the real reason for the closure of the quarry to collectors.

Chris Cozart reported on the Paleo 21 Conference he attended in Germany as a representative of MAPS and amateur paleontology. There was much discussion at the conference about devising a certification for amateurs to allow collecting on public lands.

Gil Norris gave the President's Award to Chris Cozart for his representation of MAPS at the conference in Germany. He also presented Doug DeRosear with a special "Table Chairman for the 90's" award.

I am enclosing a check for twenty-five dollars to MAPS to feel I am among my many friends, paleontologists and members in a wonderful paleontology society. Mid America Paleontology Society is the greatest with its paleontology members from near and far away places.

Thank you all again.

*Sincerely yours,
Joseph Emielity*

EARLY BIRD RADIATION

by Tim Northcutt, Mission, KS

Puzzled by questions of how modern bird anatomies could have derived from *Archaeopteryx*, many paleontologists have sought out alternative origins of modern birds in illogical reptilian models. Most recently the focus of such investigation has been in the theropod dinosaurs of the Middle and Late Cretaceous. As the various architectures of the dinosaurs, each independently, have been shown to be an inadequate model, a new dinosaur candidate has quickly been substituted in its place as the next ex-candidate.

Those seeking to make sense of the real early adaptive radiation of birds should seek out the collaborative product of the "Home Team" of international experts on the subject, Larry Martin, Alan Feduccia, Lianhai Hou and Zhonghe Zhou. In their collaborative title, *Early Adaptive Radiation of Birds: Evidence from Fossils from Northeastern China* (1996), the foursome summarize the distinctive anatomical characteristics of the two branches of the avian arbor: the enantiornithines and the ornithurines.

In the bounty of newly discovered significant Late Jurassic and Early Cretaceous deposits these experts have recognized two distinct avian body plans. Distinguishing characteristics first synthesized by Cyril A. Walker of the British Museum of Natural History in London in his description of *Enantiornithes* in 1981 have proven enormously significant and enlightening.

Recent discoveries of numerous Late Jurassic and Early Cretaceous birds from Europe, Asia, the Americas and Australia have provided evidence that the enantiornithines, or "opposite," birds were the dominant land birds of the Cretaceous world.

Three recently discovered Early Cretaceous ornithurine, or modern-type, birds are the Mongolian *Ambiortus* and the Chinese *Gansus* and *Chaoyangia*.

The relatively large numbers of complete or nearly complete skeletons of these animals has largely superseded previous work in the field of paleornithology.

The pelvis and climbing adaptations in the manus, or hand, of *Confuciusornis*, the Late Jurassic/Early Cretaceous bird (of which several hundred skeletons are now circulating) indicate a more vertical, *Archaeopteryx*-like posture than previously realized. This remarkable cache of fossils has exposed nearly every aspect of the animal's anatomy.

The foot, with its reflexed hallux (thumb) and large recurved pedal (foot) claws indicate an arboreal lifestyle. The metatarsals, the bones found between the wrists and the fingers, are fused proximally, but not distally—"opposite" of the pattern found in modern ornithurine birds. Much like the seventh and most recently discovered *Archaeopteryx*, *Confuciusornis* displays a small unkeeled sternum (breastbone) which lies at the front of a well-developed series of gastralia. The coracoid, which "seems to articulate on the anterior margin of the sternum" is more elongate than that found in *Archaeopteryx*. The broad furcula (wishbone), however, is much more like *Archaeopteryx*'s. Its short bony tail is somewhat variable in the number of free caudal, or tail, vertebrae, either 4 or 5. The free caudals posteriorly follow the pygostyle, which is made up of eight fused vertebrae. A characteristic quite different from the long reptilian series of caudal vertebrae of *Archaeopteryx*. Due to the less-than-ideal organization of the excavations in China it remains, at this time, unclear whether this variation in the number of free caudals is ontogenetic (growth and development within a single individual) or if it reflects evolutionary change over the depositional time period. This is due to exact stratigraphic position of many of the specimens being undocumented. The beak of *Confuciusornis* is toothless, as evidenced in the wealth of specimens. The plumage is now similarly well understood and includes a long-feathered tail and asymmetrically designed remiges (the large quill feathers of a bird's wing). It also seems clear that the bird was covered with contour feathers. Strong evidence for both the bird's potential for flight and an endothermic metabolism to sustain it.

Liaoningornis, which comes from the same deposits as

Confuciusornis, has attracted relatively little popular attention considering that it **displays a keeled sternum**, this being the earliest evidence of this distinctly avian structure. *Liaoningornis*, in fact, displays several ornithurine characteristics, including distal, but not proximal, fusion of the tarsometatarsus, a keel which extends nearly to the front of the sternum and coracoidal sulci (grooves). The end of the coracoid adjacent to the sternum is extended medially, or toward the center of the body, and they exhibit sternocoracoidal processes. The sternum of *Liaoningornis* is long and wide, providing the possibility that it could have acted as a pump for modern air-sac type breathing. The tarsometatarsus is itself presumed to be an adaptation selected as part of an overall simplification of architecture necessary for efficient flight.

All enantiornithines lacked the ornithurines' long posterior abdominal extension of the sternum necessary to provide the capacity for higher rates of oxygen consumption during flight, fueling doubt that they could have had a flow-through style lung typical of modern birds. Enantiornithines also lack the uncinat processes which hinge on the ribcage of all ornithurine birds.

Such fundamental anatomical differences indicate to the authors that, along with locomotor dissimilarities, the two avian lineages also likely enjoyed thermoregulatory and activity differences.

Chaoyangia, described as the next oldest ornithurine bird, displays a toothed dentary and premaxilla typical of Hesperornithiforms, *Archaeopteryx* and *Cathayornis*. The shoulder girdle, which is similar to that of *Ambiortus*'s with its deep, round scapular facets and long straplike procoracoidal processes readily distinguish it from the enantiornithines. Five distinguishing characteristics of the shoulder girdle are: (1) the furcular hypocleidium is undeveloped as opposed to the considerably enlarged hypocleidium of the enantiornithines; (2) the furcular arms (the wishbone) are rounded and internally flexible; (3) the sternum is elongated and lacks the great posterior emargination of the enantiornithines; (4) the coracoidal facets lie posterior to the anterior margin of the sternum as opposed to meeting the margin, the condition found in the enantiornithines; and (5) the

sternal keel nearly reaches the anterior margin of the sternum as opposed to the enantiornithine condition in which the keel falls considerably short of reaching the anterior margin of the sternum.

With such a wealth of new material indicating two separate flight-related morphologies, it seems quite evident that the Late Jurassic/Early Cretaceous avian radiation was far more developed than most anyone would have guessed a mere quarter century ago. Certainly significant is the realization that the Chinese birds, including the enantiornithines, *Sinornis*, *Cathayornis*, *Boluochia* and *Confuciusornis*, and the ornithurines *Chaoyangia* and *Gansus* are from nearshore environments. Spain also boasts a fauna of newly discovered Early Cretaceous small sparrow-sized birds including *Iberomesornis*, *Concornis*, *Noguerornis* and *Eoalulavis*. All of them are morphologically similar enantiornithine birds, possibly composed of a single genus. These are from lacustrine or lagoonal deposits similar to the limestones which have produced *Archaeopteryx* in Germany.

Only one logical conclusion can be drawn from this wealth of newly discovered avian material: the common ancestor of the two avian lineages should be sought not in the Middle Cretaceous skeletons of dinosaurs, but rather in Middle Jurassic or earlier reptilian designs.

(Zhonghe Zhou, now a doctoral student at KU, discovered the first known specimen of *Cathayornis* while searching the exposures for fossil paddlefish, the focus of his study at China's Institute of Vertebrate Paleontology and Paleoanthropology in 1990. After meeting with Larry Martin in 1992 at a conference in Germany and realizing the significance of the fossil, Zhou joined Martin at KU to study fossil birds in 1994.

Some thirty specimens of *Cathayornis* are now known, some are at KU, and others remain in China.

Martin believes *Cathayornis* probably lived like today's birds on the prairies and in trees but died out with its lineage at the end of the Cretaceous.)

BOOK REVIEW

by Bruce L. Stinchcomb

Charles Doolittle Walcott, Paleontologist

Ellis Yochelson

(c. 584 pp., 6 x 9, 24 halftones, notes, biblio., index)

Charles Walcott was one of the most prolific workers in paleontology during the early part of this century. Walcott's documentation of Precambrian fossils was some of the earliest and most extensive work ever done. Walcott also was the discoverer of the Cambrian Burgess Shale. This interesting work is available from Kent State University Press, P.O. Box 5190, Kent, Ohio 44242-0001, at the pre-publication price of \$40 including shipping and handling, for both individuals and libraries until July 31. (The price after that date is \$49. There is no indication if shipping and handling are extra.)

I believe you will find this an interesting book for your library.

SEDIMENTARY NOTES

Our sympathy to **Esther Labahn** and her family on the passing of her husband, **Fred**, on December 5th. They were married 30 years. Fred had been ill for six months, and Esther had suffered a heart attack in October. Shortly before his death, Fred was voted into the Hall of Fame for his many accomplishments over 42 years of service in rockhounding.

Our condolences also to the family of **Leslie Harris**, Ontario, Canada. Les, who passed away in March, had been a MAPS member for many years and regularly attended EXPO.

A speedy recovery to **Maggie Kahrs**, who is recovering from lung cancer surgery. She had one lobe and two parts of another removed on May 26th. The doctor is sure he got it all, and she expects to be fine once she gets her breath back. The cancer was discovered when she went in for her pre-op for hip-replacement surgery. She now expects to get that done in a couple months.

NEW EDITIONfrom *Paleo Newsletter*, Jean Wallace, Ed., 4/98*Common Fossil Plants of Western North America.*2nd ed. Tidwell, W. 1998. 376 pages

Illustrated with more than 800 drawings and photos, this guide will help to identify plant remains such as ferns fern allies, ginkgos, conifers, flowering plants; with a table of more than 100 localities from British Columbia to northern New Mexico and from California to South Dakota. 79 additional genera from the 1975 edition and 350 new or modified illustrations. 91 color photos, 252 black and white photos. Hardcover \$59.95; paperback \$29.95.

A LITTLE ABOUT PETRIFICATION

by Michael J Papay

from *Rockhound Roundup*, 11/94via *Paleo Newsletter*, Jean Wallace, Ed., 9/96

Have you ever wondered how petrification occurs? How does wood turn into stone? In so far as I can tell there are several events that occur in the process of petrification.

Aside from the fact that the trees must first grow to provide the wood, the first step in the process of petrification is burial. The wood must be deeply buried either while still standing or soon after falling in order to prevent its destruction by the activity of ants, beetles, termites, and fungi. The environment in which the wood is buried must also be anoxic (without oxygen), otherwise micro-organisms would soon destroy the wood.

The matrix encapsulating the deeply buried wood must be rather firm in the sense that it not be too plastic. A thick mud would not be stable enough to maintain the shape of the wood through the vagaries of time. Instead, the matrix would have to be rather like a porous concrete or consolidated sand. The porosity is important because porosity allows the introduction of water.

Once the wood is deeply buried in a consolidated, porous matrix in an anoxic environment, it can only be transformed from wood to stone if quartz and water are present under the right conditions. No quartz, no water, no petrified wood.

Fortunately, quartz is a common and abundant mineral, and even the deserts have their days in the rain. And as the fallen rain passes down through the ground, it picks up and carries a little quartz dissolved in its waters. This solution then

Continued on Page 8

ADVERTISING SECTION

Ads are \$5.00 per inch. Send information and checks payable to MAPS to : Mrs. Gerry Norris, 2623 34th Avenue Ct., Rock Island, IL 61201. Phone: (309) 786-6505

This space is a \$5.00 size.

To extend currently running ads, please send request and remittance to Editor by the 15th of the month. We do not bill. Ads do not run in the EXPO issue (April). Ads can be printed in different sizes of type to fit a 1" space.

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BIG GAME HUNTING WITHOUT GUNS!

from *Paleo Newsletter*, Jean Wallace, Ed., 4/98

Wyoming Dinosaur Safaris is proud to present an opportunity to join our team to discover and uncover Jurassic-age dinosaur bones from our sites located on private lands. This is our first year in business, and we are extremely excited to offer to interested participants the chance to get in on the ground floor of what should be a productive dinosaur dig located in a known dinosaur-bearing province in the scenic Big Horn Basin. For additional information, contact:

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phone: 1-800-fossils {367-7457} or

1-508-378-7081

**VI CONGRESS OF MEXICAN
PALEONTOLOGY**

by Virginia Friedman

(Sociedad Mexicana de Paleontologia)

The VI Congress of Mexican Paleontology took place in Mexico City from February 11 to 13 of this year. The program included lectures, seminars, exhibits and field trips. The Congress was organized by the Instituto de Geologia of the National Autonomous University of Mexico (UNAM) and by the Sociedad Mexicana de Paleontologia. Dr. Dante Moran, Dean of the above mentioned Institute, in an interview stated that, in spite of Mexico's numerous fossiliferous localities, there are still very few professionals in this field. Nevertheless, the Congress provided an eye-opening experience regarding the extent and depth of paleontological research and resources in Mexico.

The Congress took place in the Conjunto Amoxcalli of the UNAM campus. Topics included, among many others: 1) Birds or Dinosaurs in the State of Durango, Mexico; 2) A benthic foraminiferal assemblage from the lower Chilacachapa Formation, State of Guerrero, SW Mexico; 3) *Jamilcotatus kumiaica*, a new genus and species of middle Miocene desmostylians; 4) Cenozoic Vertebrates of the State of Hidalgo; 5) Permian Trilobite from the Olinala Formation, Guerrero, Mexico; 6) Presence of *Sigillaria* cf. *elegans* (Licopsida-Lepidodendracea) in the Upper Pennsylvanian, State of Puebla, Mexico; 7) Fossil Turtles in the States of Durango and Zacatecas; 8) Early Aptian rudists, gastropods and foraminifera from the el Cajon formation, Michoacan, Mexico; and 9) Early Cretaceous rhynchonellid brachiopods from San Lucas, State of Michoacan, Mexico.

It is very satisfactory to know that paleontology in Mexico is progressing, research is increasing and that there is also greater public awareness. To this date, the Sociedad Mexicana de Paleontologia is comprised of some 200 researchers from throughout Mexico. The government is slowly but increasingly taking a more active role in protecting Mexico's abundant paleontological resources.

Please ADD the Following NEW OR REJOINING MEMBERS to Your Directory:

Robert H. Buchholz
1303 Est 2nd Ave
Monmouth, IL 61462
309-734-6123

Professor Emeritus. Major interest Biology-Zoology

Jeff Crank
Sue, Abby, & Adam
4 Cotillion Ct
O'Fallon, MO 63366
314-240-3511
jcrank@aol.com

Production Manager. Will trade

Irma & Carl Dahl
16 Las Palmas Way
Kissimmee, FL 34743
407-344-0258

Retired. Will trade. Major interest echinoids, brachiopods, anthozoa. Have for trade Silurian material from Sweden, Florida echinoids. Member of Tampa Bay Fossil Soc.

Michael K. Diamond
3100 37th St
Rock Island, IL 61201
319-788-1263

Teacher, writer. May trade. Major interest fish, tetrapods. Nothing for trade in 98. Wants to find out about good collecting localities and to get together with fellow paleontologists for collecting sorties.

Robert Drachuk
P.O. Box 206
Delta, UT 84624

Steve & Kathleen Eppel
1646 Marlo Ave
Davenport, IA 52803
319-355-1580
speppel@aol.com
keppel@aol.com
keppel@iroe.k12.il.us

Michel & Ava Farivar
17289 Akita Court
Strongsville, OH 44136
440-816-9028

M.D. May trade. Interested in invertebrates and vertebrates. Member of Northcoast Fossil Club. Wants to make contacts and obtain information.

Robert Gardon
5900 Golfview Drive
Dearborn Heights, MI 48127
313-562-8124

Model Maker. Will trade. Just starting to collect (98).

Please NOTE The Following CHANGES OF ADDRESS:

Dr. Carlos & Martha Bazan
310 Tamworth
San Antonio, TX 78213
210-366-2377

Paul L. Burdeno
P.O. Box 1128, HC79
Crowley Lake, CA 93546
760-935-4225

MARCH 1998

John Junkroski
18617 River Rd.
Marengo, IL 60152
815-568-6813
junk@mc.net

H.S. science teacher. Will trade. Major interest field trips/collecting: cephalopods, crinoids, pet. Wood, etc. Member of ESCONI.

Red Cedar Preserve
Craig Kohl
4005 Ponds Lane
Toddville, IA 52341
319-378-1427

Naturalist. Collecting since 1960. Will trade. Interested in all fossils. Has for trade fossils from around the world. Wants to learn more about Earth's history and meet others with similar interests.

Thomas E. Roiser
5245 Orchard Crest
Troy, MI 48098
248-689-5362

Interested in all fossils--dinosaur. Wants to buy for his collection and business.

Jeff Suttle
USDA-ARS-NCSL
PO Box 5677
Fargo, ND 58105-5677
701-282-2058
jsuttle@badlands.nodak.edu

Plant physiologist employed by the USDA in Fargo. Major interest is plant macrofossils (leaves, etc.). Also interested in invertebrates.

Olen Eugene Taylor
8966 E. 33rd Place
Tulsa, OK 74145-1620
918-622-1974

Disabled. Will trade. Has for trade trilobite, mastodon and mammoth teeth, bone tusk, bison skulls bones, cephalopods, etc.

Richard D. Taylor, Jr.
2404 Bellevue manor Dr.
Nashville, TN 37221
615-662-1674
615-789-4055
taylors144@aol.com

Attorney, Public Defender. Will trade. Major interest invert. Has for trade some Miss. Crinoids, blastoids, Silurian trilos., cystoids, sponges, Lower Dev. bivalves, trilos. Wants to increase knowledge of invert. Paleo., correspond with others interested in same subject.

Robert Wilk
614 Melissa Ln
Garland, TX 75040
972-495-2017

Major interest molluscs/Cretaceous. Member of Dallas Paleo Soc.

Paul & Sheryl Caponera
400 Oak Lane
San Gabriel, CA 91775
626-308-1892
CAPONER@ARCLA.ORG

Red Cross Manager. Will trade. Interested in all fossils. Has for trade many items--vert. & invert. & flora

David M. Cassel
P.O. Box 2858
Aptos, CA 95001
408-768-0312
echinoidave@yahoo.com

Will trade. Major interest echinoids. Has for trade echinoids.

Patricia A. Eicks
12 Holiday Lane
St. Louis, MO 63131

Dr. Merrill W. Foster
Department of Geol. Sciences
Bradley University
Peoria, IL 61625
309-677-2352
fossil@bradley.bradley.edu

Virginia Freidman
903 Red Oar Dr.
Mansfield, TX 76063
817-473-6859
friedman@startext.net

Interested in Penn. Fossils (mainly fossil seeds), trilobites, corals, etc. Member of Dallas Paleo Soc., Austin Paleo Soc., and Sociedad Mexicana de Paleontologia

Yale R. Goldman
86 Dunne Ave
Collinsville, CT 06022
860-693-4614
snakefly@hotmail.com

Will trade.

Carl Green
4607 Co. Rd. 445
Ft. Payne, AL 35968
215-623-3109

Richard Hagar
235 Toulon Dr.
St. Louis, MO 63125

Bess Harners
652 Benjamin Way
Phoenix, OR 97535-7714
541-535-6269

Diverse material collected over many years! Strongest in FL (echinoids), TX NY. Will trade.

Herbert Knodel
147 Annapolis Lane
Rotonda, FL 33947
941-698-1222
fx 941-698-1660

Joseph Koniacki
3529 E. Joy Road
Ann Arbor, MI 48105
734-994-1327
JKONIECKI@aol.com

PETRIFICATION: Continued from Page 5

permeates the buried wood. Now the miracle happens: a little wood dissolves into the water and a little quartz is deposited in its place, and the water moves on its way carrying away a little carbon, leaving behind a little quartz

The slow process of removing organic material while depositing quartz may take thousands of years to reach completion. In fact, petrification may not reach completion before the favorable conditions end.

If you have collected petrified wood in the field, you will know firsthand that not all specimens are the same. The most sought-after petrified woods are

Jacqueline Kozisek
706 N. Wright St.
Naperville, IL 60563
630-637-9420

Fossil Preparator.

John B. Pate
P.O Box 338
Stafford, TX 77497-0338
281-261-8901
jbpat@get.net

Herman P. Rechten
7405 Shields
Harvard, IL 60033-9491
815-943-4178

Bob & Vivian Shaha
11810 Stonehedge
Claremore, OK 74017
918-342-5661

Don Smarjesse
23628 Stonehenge
Novi, MI 48375
248-476-3386

David L. Thompson
3389 Braeburn
Ann Arbor, MI 48108
734-973-9027
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specimens in which the process went to completion, leaving behind highly agatized or opalized wood. These specimens can be sawed and the sawed ends given a mirror polish to reveal the beauty of the specimen. Specimens too small for sawing are tumbled to mirror finishes which are highly attractive.

Wood that was not agatized or opalized may be shunned by collectors that fail to see the rugged beauty of the uncut, unpolished specimens. Other collectors favor these exquisite specimens as fossils of a bygone age and as natural works of art wrought by nature and not the hand of man.

Believe it or not, some portions of a specimen may be preserved as the original wood while other portions of the same specimen are lignified or petrified to various degrees. While the rockhound may not appreciate these specimens, scientists may rejoice over the intact wood, for they may reveal through their methods the ancestry and biology of the tree which otherwise they could never behold

The Mid-America Paleontology Society (MAPS) was formed to promote popular interest in the subject of paleontology; to encourage the proper collecting, study, preparation, and display of fossil material; and to assist other individuals, groups, and institutions interested in the various aspects of paleontology. It is a non-profit society incorporated under the laws of the State of Iowa.

Membership in MAPS is open to anyone, anywhere who is sincerely interested in fossils and the aims of the Society.

Membership fee: One year from month of payment is \$20.00 per household. Institution or Library fee is \$25.00. Overseas fee is \$20.00 with Surface Mailing of DIGESTS OR \$30.00 with Air Mailing of DIGESTS. (Payments other than those stated will be pro-rated.)

MAPS meetings are held on the 2nd Saturday of October, November, January, and March and at EXPO in April. A picnic is held during the summer. October through March meetings are scheduled for 1 p.m. in Trowbridge Hall, University of Iowa, Iowa City, Iowa. One annual International Fossil Exposition is held in April.

MAPS official publication, MAPS DIGEST, is published 9 months of the year—October through April, May/June, July/August/September.

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Dated Material - Meeting Notice

CYATHOCRINITES



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